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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/574,987	05/12/2000	Carol A. Becker	82408	9258

7590

07/02/2002

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EXAMINER

TRAN, THAO T

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 07/02/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/574,987	BECKER, CAROL A.	
Examiner	Art Unit	
Thao T. Tran	1741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(e). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-13 and 27-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-13 and 27-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Appeal Brief

1. In view of the Appeal Brief filed on February 27, 2002, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Prosecution has been reopened because in the prior Office Actions of May 8, 2001 and October 30, 2001, the solution containing anthracene and the polymer disposed in the solution were taken as the materials to be worked upon in apparatus claims. And for this reason, the solution and the polymer were not given patentable weight. However, upon reconsideration of the claims, the examiner has recognized that the solution and the polymer have significant functions in the claims, and therefore, these limitations are considered to have significant patentable weight. Thus, prosecution has been reopened.

2. Claims 7-13 and 27-38 are currently pending in this application. Claim 14 has been cancelled in Paper No. 8.

Claim Objections

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 37, first occurrence has been renumbered claim 34.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-13 and 27-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zirino (US Pat. 5,334,629) in view of Kane (US Pat. 4,785,814).

In regards to claim 7, Zirino teaches a solution, containing a pH dependent dye and a polymer (polyelectrolyte fiber or gel); the polymer comprising polyacrylic acid, which changes its volume in response to a change in pH (contracts and expands upon the addition of an acid or base); and a source of visible light for irradiating the solution with a wavelength and intensity to bring about a pH change in the solution, which then brings about a volume change in the fiber (see Abstract; Fig. 2; col. 1, ln. 35-48; col. 2, ln. 44-63; claim 1).

Zirino further teaches that a number of pH dependent dyes would be chosen, dependent upon selective light actuation and powering (see col. 8, ln. 19-21). However, Zirino does not specifically teach the use of anthracene in the pH dependent solution.

Kane teaches the use of anthracene as a dye in a pH sensitive polyacrylic membrane of an optical fiber (see col. 4, ln. 16-23).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have included anthracene, as taught by Kane into the solution of Zirino, because Zirino teaches that a number of pH dependent dyes would be chosen, dependent upon selective light actuation and powering (see col. 8, ln. 19-21). Hence, anthracene would have been selected as a dye in the solution, depending upon operation conditions and user's preference and intended use. See *In re Dailey*, 149 USPQ 47 (CCPA 1966); *In re Kuhle* 188 USPQ (CCPA 1975).

In regards to claims 8-9, and 11-12, Zirino teaches the polymer being polyelectrolyte fiber, which is polyvinyl alcohol-polyacrylic acid (claims 8-9); or a polymer gel, which is an acrylamide gel (claims 11-12) (see col. 8, ln. 7-12).

In regards to claims 10 and 13, Zirino teaches a pH change in the solution is within plus or minus 1 pH of a null point pH value of the polymer fiber or gel (see col. 2, ln. 64 to col. 3, ln. 13).

In regards to claim 27, the Zirino combination is silent with respect to a protonated anthracene. However, since the null point pH value of the polyelectrolyte fiber is 5.3, the pH of the solution in the Zirino combination would be acidic because it is within plus or minus 1 pH of

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5.3. Thus, anthracene in the solution of the Zirino combination would be in the protonated form, because it is in an acidic solution.

In regards to claims 28-29, the arguments are as presented in claims 8-9.

In regards to claims 30 and 33, the arguments are as presented in claims 10 and 13.

In regards to claims 31-32, the arguments are as presented in claims 11-12.

In regards to claim 34, the arguments are as presented in claims 7-8.

In regards to claim 35, the arguments are as presented in claim 9.

In regards to claim 37, the arguments are as presented in claims 7 and 11-12.

In regards to claims 36 and 38, the arguments are as presented in claim 27.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 703-306-5698. The examiner can normally be reached on Monday-Friday, from 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 703-308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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June 27, 2002



NAM NGUYEN

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700